

AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings includes changes to Figures 7, 8a, 8b, 9, 20, 21a, 21b, 22, and 23. These sheets, which include Figures 7, 8a, 8b, 9, 20, 21a, 21b, 22, and 23, replace the original sheets including Figures 7, 8a, 8b, 9, 20, 21a, 21b, 22, and 23.

Attachment: Replacement Sheets (7)

REMARKS

Claims 1-34 are pending in the current application. Of those, claims 1 and 28 are independent claims. Claim 4 is amended by this Response. Claim 15 is canceled by this Response. New claims 35-36 are added by this Response.

Drawings

The Examiner asserts that FIGS. 7, 8a, 8b, 9, 20, 21, 22, and 23 should be designated by a legend such as Prior Art. Applicant respectfully submits that FIGS. 7, 8a, 8b, 9, 20, 21, 22, and 23 are amended to include the legend "Prior Art."

35 U.S.C. § 112 Rejection

Claim 15 stands rejected under 35 U.S.C. § 112, first paragraph, as allegedly being based on disclosure which is not enabling. Applicant respectfully submits that claim 15 is canceled by this Response, and therefore, any rejections to claim 15 are rendered moot.

Claims 4, 6 and 34 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to claim 4, the Examiner asserts that it is unclear what "supplying circuit supplies the common electrode voltage of an equal value to each other" means. Applicant respectfully submits that claim 4 is amended to clarify the meaning for the Examiner. Further, Applicant respectfully submits that an example embodiment may include three groups of the common electrodes, e.g., a first group E1, a second group E2, and/or a third group E3. The first group E1 may have two voltages (e.g., voltage V11 and voltage V12). Voltage V11 may be a voltage which is provided to the common electrodes corresponding to the first pixel capacitor. Voltage V12 may be a voltage which is provided to the common electrodes corresponding to the second pixel capacitor. The second group E2 may have two

voltages (e.g., voltage V21 and voltage V22). Voltage V21 may be a voltage which is provided to the common electrodes corresponding to the first pixel capacitor. Voltage V22 may be a voltage which is provided to the common electrodes corresponding to the second pixel capacitor. The third group E3 may have two voltages (e.g., voltage V31 and voltage V32). Voltage V31 may be a voltage which is provided to the common electrodes corresponding to the first pixel capacitor. Voltage V32 may be a voltage which is provided to the common electrodes corresponding to the second pixel capacitor. Voltages V11, V21, and V31 may all be equal, but voltages V12, V22, and V32 may be independent from each other.

In regard to claims 6 and 34, the Examiner asserts that it is unclear what “grouped for n lines of the scanning lines (n includes one) where e is a positive integer” means. Applicant respectfully submits that claims 6 and 34 clearly disclose the groups of the common electrodes each correspond to n scanning lines, and that in the case of claim 34 the n scanning lines are sequential scanning lines. For example, in regard to claim 6, if n is 1, certain one scanning line may belong to a first group, other certain one scanning line may belong to a second group, and/or further other certain one scanning line may belong to a third group. For an alternative example, if n is 2, certain two scanning lines may belong to the first group, other certain two scanning lines may belong to the second group, and/or further other certain two scanning lines may belong to the third group.

In view of the above, Applicant respectfully requests the rejections under 35 U.S.C. § 112 be withdrawn.

Claim Rejections

Claims 1, 2 and 28 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Nakao (US 2001-0003431, hereinafter “Nakao”). Claims 3-27 and 29-34

stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Nakao in view of Hisao (JP 05-053534, hereinafter “Hisao”). Applicant respectfully traverses these rejections.

Nakao discloses at paragraph [0063] “It is to be noted that the construction of the LCD device in which the gray scale display reference voltage generating circuit of the present embodiment is built, the construction of the LCD panel of the LCD device, the LCD drive waveform and the construction of the source driver of the LCD panel are identical to the construction of the LCD device, the construction of the LCD panel, the LCD drive waveform and the construction of the source driver described with reference to FIG. 6 through FIG. 10, and therefore, no description is provided for them herein.”

In particular, Nakao discloses at paragraph [0013] and FIGS 6-10 “a gray scale display reference voltage generating circuit 39 generates a reference voltage...The data in the hold memory 34 is transmitted to a D/A converter circuit 36 via a level shifter circuit 35 and converted into an analog voltage on the basis of the reference voltage at each level from the gray scale display reference voltage generating circuit 39. Then, the analog voltage is outputted as the aforementioned gray scale display voltage from an LCD drive voltage output terminal 38 to the source signal lines 14 of the LCD elements A by an output circuit 37.”

Nakao discloses at paragraph [0064] “The gray scale display reference voltage generating circuit 41 of the present embodiment forms 64 levels of reference voltages and generates intermediate voltages similarly to the conventional gray scale display reference voltage generating circuit 39 shown in FIG. 11.”

Therefore, Nakao clearly discloses that the gray scale reference voltage generating circuit 41 described in preferred embodiments is merely substituted for the gray scale reference voltage generating circuit 39 described in FIGS. 6-10. Further, as is clear from the description of Nakao, the gray scale reference voltage generating circuit 41 provides voltages to the D/A converter circuit 36 of FIG. 6 which in turn supplies voltages to be output by

output circuit 37 to **the source signal lines 37**. Therefore, Nakao is completely unrelated to supplying and adjusting **multiple common electrode voltages to common electrodes**. In particular, Nakao clearly discloses at paragraph [0019] “there is provided a gray scale display reference voltage generating circuit for generating reference voltages for gray scale display used in converting display data from a digital form into an analog form...” As such, one skilled in the art would clearly recognize that display data, with which the gray scale reference voltage generating circuit is concerned, would not be supplied to the common electrode (opposite electrode 2, 16) of the LCD panel illustrated in FIGS. 6-7. Accordingly, Nakao fails to disclose “a common electrode voltage supplying circuit for supplying common electrode voltages to the common electrodes, said **common electrode voltage supplying circuit being capable of adjusting the common electrode voltages**” as required by claim 1.

Applicant respectfully submits that even assuming for the sake of argument Nakao and Hisao are properly combinable (which Applicant does not admit), Hisao fails to cure the deficiencies of Nakao discussed above, and therefore, claim 1 is not rendered obvious by a combination of Nakao and Hisao. Accordingly, claim 1 is patentable for at least the above reasons. Claim 28 contains features somewhat similar to those discussed above in regard to claim 1, and therefore, claim 28 is patentable for at least somewhat similar reasons as claim 1. Claims 2-14, 16-27, and 29-34, which depend from one of claims 1 and 28 are patentable for at least the same reasons discussed above in regard to claims 1 and 28 as well as on their own merits.

Applicant now separately addresses dependent claim 2. Nakao clearly discloses at FIG. 7 each of the opposite electrode 16 are connected. Therefore, Nakao further fails to disclose “the common electrodes of the pixels are divided into a plurality of groups, and the common electrode voltage supplying circuit is capable of respectively adjusting the common electrode voltages so that the common electrode voltages are adjusted independently every

groups” as required by claim 2. Accordingly, claim 2 is patentable for at least this additional reason.

In view of the above, Applicant respectfully requests the rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) be withdrawn.

New Claims

Applicant respectfully submits that new claims 35-36, which depend from one of claims 1 and 28, are patentable for at least the same reasons discussed above in regard to claims 1 and 28 as well as on their own merits.

CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of the claims in connection with the present application is earnestly solicited.


Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Donald J. Daley at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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